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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/273,448

03/22/1999

SHINGO OHKAWA

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7146

21171 7590 12/28/2007

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EXAMINER

NGO, HUYEN LE

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

12/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

09/273,448

**Applicant(s)**

OHKAWA, SHINGO

**Examiner**

Julie-Huyen L. Ngo

**Art Unit**

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-25 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-25 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Figure 2</u> .                         |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 1, 2007 has been entered except for the limitation amended in the last clause of claims 13 and 29, respectively.

### ***Response to Amendment***

The amendments filed in February 21<sup>st</sup>, 2003, September 10, 2004, December 13<sup>th</sup>, 2006, August 1<sup>st</sup>, 2007 and October 1<sup>st</sup>, 2007 are objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Amendments to SPECIFICATION:

Filed September 10, 2004:

Please REPLACE the paragraph beginning at page 8, line 16, with the following paragraph:

As indicated with circle C in Fig. 1, each of the projection rows include a pair of slopes 9A, 9B running approximately in parallel with respect to the incidence end face 7B1. Each pair of slopes is directly connected to give a triangular-like cross section to each projection row. The slopes 9A mainly

receive light from fluorescent lamp 1 1A and slopes 9B mainly receive light from fluorescent lamp 11B. This prism sheet 9 modifies directivity regarding in a plane perpendicular to the incidence end face(s) 7B1 (and 7A1). Detail of modifying effect is described later. Output light from the prism sheet 9 irradiates a LCD panel LP via a light diffusion plate 10.

Filed December 13<sup>th</sup>, 2006:

After page 12, line 15, please insert:

The slopes 9A mainly receive light from said fluorescent lamp 11B and the slopes 9B mainly receive light from the fluorescent lamp 11A.

Filed August 1<sup>st</sup>, 2007

Please AMEND the description previously added after page 12, line 15 as follows:

The slopes 9A mainly receive and reflect light from said fluorescent lamp 11B and the slopes 9B mainly receive and reflect light from the fluorescent lamp 11A.

**Amendment to the CLAIMS:**

**In last clause of claim 13**

Filed February 21<sup>st</sup>, 2003

"...so that said first slopes mainly receive light from said first primary light source and said second slopes mainly receive light from said second primary light source."

Filed August 1<sup>st</sup>, 2007

"a prismatic light control member provided with a great number of pairs of first and second slopes disposed along said second emission face so that said first slopes mainly receive and reflect light from said first primary light source and said second slopes mainly receive and reflect light from said second primary light source to control directivity of output illumination light from said second emission face."

Filed October 1<sup>st</sup>, 2007

In the last clause of newly submitted claim 28:

“a prismatic light control member provided with a great number of pairs of first and second slopes disposed along said second emission face so that said first slopes mainly receive and reflect light from said first primary light source and said second slopes mainly receive and reflect light from said second primary light source to control directivity of output illumination light from said second emission face.”

**Applicant is required to cancel the new matter in the reply to this Office**

**Action.**

Although, Figure 2 of this application only shows that a prismatic light control member 9 provided with a great number of pairs of first and second slopes disposed along said second emission face of the second guide plate so that said first slopes receive and reflect light from said first primary light source 11A and said second slopes receive and reflect light from said second primary light source 11B. The light rays, **however**, can be receivable in ALL directions (See attached marked up of Figure 2 for other possible light rays).

Furthermore, there is nothing to avoid the first and second slopes from receiving light from BOTH the first and the second primary light sources. The set forth above amendments to the specification and claims can not be entered and considered to be NEW MATTER added to the original disclosure.

However, the Applicant has not provided any criticality for the first slopes mainly receive and reflect light from the first primary light source and said second slopes

mainly receive and reflect light from the second primary light source as recited in claims 13 and 28.

***Claim Rejections - 35 USC § 112***

Claims 13-22 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The last clause of claims 13 and 28 introduced new subject matter:

“a prismatic light control member provided with a great number of pairs of first and second slopes disposed along said second emission face so that said first slopes mainly receive and reflect light from said first primary light source and said second slopes mainly receive and reflect light from said second primary light source to control directivity of output illumination light from said second emission face.”

All claims that are depended from the above-rejected claims and are not specifically discussed above are rejected as bearing the defects of the claims from which they depend.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-16, 25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. (US5963280A) in view of Oyama et al. (US5808708A) and further in view of Miyashita et al. (US6011602A).

With respect to claims 13, 25 and 29 Okuda et al. teach (Fig. 4, col. 16, line 62 to col. 17, line 17) a liquid crystal display including a liquid crystal display panel and a surface light source device of side light type for backlighting of the liquid crystal display panel, said surface light source device comprising:

- a first guide plate
- a first primary light source 17 with red color disposed beside the first guide plate
- a second guide plate
- a second primary light source 8 with blue color disposed beside the second guide plate
- said first guide plate having two major faces to provide a first emission face and a first back face and having a minor face to provide a first incidence end face which is supplied with illumination light from said first primary light source 17
- said second guide plate having two major faces to provide a second emission face and a second back face and having a minor face to provide a second incidence end face which is supplied with illumination light from said second primary light source 8
- said first guide plate and said second guide plate being laminatedly arranged so that said second back face extends along said first emission face

- said first incidence end face and said second incidence end face being located oppositely to each other across said laminatedly arranged guide plates,
- a light control member (the scattering layers 14 and 16) to control directivity of output illumination light is disposed along said second emission face.

However, Okuda et al. fail to disclose the following features recited in the following claims:

Claims 13, 25 and 28: said light control member is a prismatic light control member having a great number of pairs of first and second slopes disposed along said second emission face so that said first slopes mainly receive and reflect light from said first primary light source and said second slopes mainly receive and reflect light from said second primary light source to control directivity of output illumination light

Claims 13 and 25: a driving circuit to drive the first primary light source and the second primary light source

Miyashita et al. teach (Figs. 23-25) forming a prismatic light control member 321 with a great number of pairs of first and second slopes to control directivity of output illumination light, said prismatic light controller member is disposed along an emission face of the light guide 307. The first slopes mainly receive and reflect light 305 from one side/direction of the light guide or from the light source 322, and the second slopes mainly receive and reflect light 306 from another side/direction of the light guide to



control the directivity of the light illuminated from the light guide for improving the frontal illumination performance.

Therefore, it would have been obvious for one of ordinary skill in the art to modify Okuda surface light source device with Miyashita's prismatic light control member 321 having a great number of pairs of first and second slopes to control directivity of output illumination light, and to dispose said prismatic light control member along the second emission face of Okuda's second guide plate so that the first slopes mainly receive and reflect light from the first primary light source 17 and the second slopes mainly receive and reflect light from said second primary light source 8 for improving the frontal illumination performance, as taught by Miyashita et al.

Although Okuda et al. do not clearly disclose a driving circuit to drive the first primary light source and the second primary light source. One of ordinary skill in the art would have known that there must be a driver circuit to drive/control the light sources for adjusting the intensity of output light from the light source or for selectively outputting a specific color display as evidenced by Oyama with the control circuit 16 for controlling the light sources 3 on the back surface of the light guiding plates 4114 (Figs. 2, 3 and 8, col. 1, lines 26-33, col. 7, lines 24-27 and col. 11, lines 26-28).

Therefore, It would have been obvious for one of ordinary skill in the art to employ a driver circuit such as the control circuit 16, as taught by Oyama, to drive or control the first primary light source 17 and the second primary light source 8 in the

surface light source device of Okuda LCD for adjusting the intensity of output light from the light source or for selectively outputting a specific color display.

With respect to claim 14, it would have been obvious for one of ordinary skill in the art to selectively turning off one of the first and second primary light sources to adjust the intensity of light output or for selecting a specific color display. Therefore, the driver circuit in Okuda in view of Oyama LCD device would obviously capable of turning off only one of the first and second primary light sources.

With respect to claims 15 and 16, Okuda et al. teach (Fig. 4) that said first and second guide plates have wedge-shaped cross sections so that said first and second incidence end faces are located at thicker ends of the cross sections, respectively.

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. in view of Oyama et al. and Miyashita et al. as applied above to claims 13-16, and further in view of Ohkawa (US 5997148).

Okuda et al. in view of Oyama and Miyashita LCD device fails to disclose the features recited in claims 17-20.

Ohkawa teaches (figs. 1 and 2 and col. 5, line 32-col. 6 line 14) forming a great number of projection rows 102 running approximately at right angles with respect to the incidence end face 12A on the lower edge/back face 12B of a guide plate 12 for preventing the reflective appearance have a possibility to influence the directivity of

characteristic of emission light from the emission surface 12C of light guide 12. Doing so would suppress the appearance of bright light entering the vicinity of the lower edge EI and provides output light having high uniformity.

Therefore, it would have been obvious for one of ordinary skill in the art to form a great number of projection rows running approximately at right angles with respect to the first incidence end face on the first back face of the first light guide in Okuda in view of Oyama and Miyashita LCD device for suppressing the appearance of bright light entering the vicinity of the lower edge and provides output light having high uniformity, as taught by Ohkawa.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda in view of Oyama and Miyashita et al. as applied to claim 13, and in further view of Arai (US6049649).

Okuda et al. in view of Oyama and Miyashita LCD device fails to disclose the features recited in claims 21 and 22.

With respect to claim 21, a prism sheet (light control member) is conventionally used to modify the preferential propagation direction such as frontal direction of output light in a surface light source device such as the light control members 4/14 disclosed by Arai (figures 3,4 and 11-18). This light control member is provided with slopes on the inner reflection surface facing the emission surface of the guide light to modify the directivity of illumination output light from the light guide and for uniform illuminating of the output light.

Therefore, it would have been obvious for one of ordinary skill in the art to employ a light control member having the slopes provided on the inner reflection surface in Okuda in view of Oyama and Miyashita LCD device to modify the directivity of illumination output light so that illumination output light originated from any one of the first and second primary light source is directed to the frontal direction with respect to the second emission face, as taught by Arai.

With respect to claims 22, the light control member employed in Okuda LCD in view of Oyama, Miyashita and Arai as applied to claim 21 above would obviously has an inner face provided with a great number of projection rows running approximately parallel with respect to the second incidence end face, wherein each of said projection rows including a pair of first and second slopes for modifying the directivity of illumination output light from the second emission surface of the second guide plate.

### ***Response to Arguments***

Applicant's arguments filed on October 1, 2007 have been fully considered; however, Miyashita et al. prismatic array/light control member (321) as shown in Figure 23 can still meet the recitations in the claims 13 and 28 as set forth below.

#### **Applicant's ONLY arguments are:**

1) The slopes of the prism array 321 of Miyashita receive light after light receiving is performed by the top and side surfaces 312a, b of the projections 312. In contrast, in present Fig. 2, the light is received directly from the lamps 11 by the prism sheet 9.

2) Okuda does not teach the claimed dividing up of received light. Furthermore, Miyashita teaches element 321 having first and second slopes, however, there is no light emitted from the light guide plate, as shown in Fig. 25 of the reference. Neither of the slopes receives light 306. Instead, slopes on the right side are only used for inner reflection after light receiving is completed by the upper flat face opposite both slopes.

Examiner's responses to Applicants' ONLY arguments are:

1) Applicant is to note that in Fig. 2 of the present application, light does not received directly from the lamp 11 by prism 9, which receives light from the lamps 11A&B via the light guide plates 7A&7B. However, the slopes of the prism array 321 of Miyashita receive light directly from Okuda's second guide plate (see figure 4 of Okuda).

2) In Miyashita et al. device, light from opposite directions/sides that are directed / reflected by the light guide 311/307 are directed and reflected through the prismatic light control member (321) in the direction perpendicular to the emitting surface of the prism as shown in Figure 23, and more clearly in figures 29, 31 and 32 with light emitted from OPPOSITE directions/sides of the light guide (420, 520 , 620) are received and reflected by both slopes of the prismatic light control member (430, 530 and 630).

Note that once Miyashita's prismatic light control member 321 is disposed along the second emission face of Okuda's second guide plate (see figure 4 of Okuda), the first slopes (the one on the RIGHT ) would mainly received and reflected light from said first primary light source 17 and said second slopes (the one on the LEFT) would mainly

received and reflected light from said second primary light source 8 for improving the frontal illumination performance in Okuda surface light source device, as taught by Miyashita et al.

Therefore, Okuda surface light source device as modified by Miyashita would obviously capable to perform the claimed features recited in claims 13 and for having the first slopes mainly receive and reflect light from said first primary light source 17 and said second slopes mainly receive and reflect light from said second primary light source 8. Thus the applied references of Okuda and Miyashita can still read on all claimed limitations.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on M-Thursday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. David Nelms can be reached at (571) 272-1787.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Application/Control Number:  
09/273,448  
Art Unit: 2871

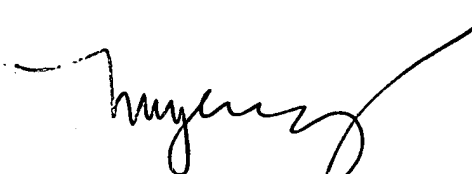
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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 19, 2007



**Julie -Huyen L. Ngo**  
**Primary Examiner**  
Art Unit 2871

032299-0348

Attachment (please scan and send)